

Section 1: IDENTIFICATION

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|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name: | Cationic Emulsions |
| Synonyms: | CQS-1HP (100996); CQS-1H-P (Slurry) (100996); CQS-1H-P (Rutfill) (100996); LMCQS-1H (100996); CRS-1 (101001); CRS-2 (101002); RS-1K (101002); CRS-2P (101003); LMCRS-2 (101003); CMS-2P (100943); CSS-1 (101004); CSS-1H (101006); CQS-1H (100995). |
| Chemical Family: | Cationic emulsified asphalts. |
| Product Use: | Road Construction: Slurry seal, Microsurfacing, Rutfilling, Chip Seal, Tack Coat, Stabilization, Fog Seal, Slurry Seal. |
| Restrictions on Use: | Not available. |
| Manufacturer/Supplier: | Husky Oil Marketing (Husky Oil Operations Ltd.) PO Box 6525 Station 'D' Calgary, Alberta T2P 3G7 |
| Phone Number: | 403-298-6111 |
| Emergency Phone: | 403-262-2111 |
| Date of Preparation of SDS: | April 23, 2021 |

Section 2: HAZARD(S) IDENTIFICATION**GHS INFORMATION**

Classification: Not hazardous according to OSHA criteria (29 CFR 1910.1200).
Not hazardous according to WHMIS 2015.

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: None.

Hazard Not applicable.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.



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Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: 75% of this product mixture consists of ingredient(s) of unknown acute toxicity.

This material is not considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is not considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

| Hazardous Ingredient(s) | Common name / Synonyms | CAS No. | % wt./wt. |
|-----------------------------------------------|-----------------------------|-----------|-----------|
| Asphalt | Not available. | 8052-42-4 | 40 - 70 |
| Hydrogen sulfide (H ₂ S) | Hydrogen sulphide | 7783-06-4 | < 0.1 |
| May or may not contain: | | | |
| Benzene, ethenyl-, polymer with 1,3-butadiene | Styrene-butadiene copolymer | 9003-55-8 | 1 - 5 |

This product is a liquid in which asphalt cement is dispersed as stable droplets in a cationic soap solution.

Section 4: FIRST-AID MEASURES

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| Inhalation: | If inhaled: Call a poison center or doctor if you feel unwell. Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. This product may contain trace amounts of Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within minutes of continuous exposure. Above 500 ppm Hydrogen sulphide may cause instantaneous loss of consciousness and immediate death. |
| Eye Contact: | If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell. Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. |
| Skin Contact: | If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell. Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching. |
| Ingestion: | If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. |

Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. If swallowed in large quantities, Asphalt can obstruct the intestine.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately. For inhalation of Hydrogen Sulphide, consider oxygen.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Emulsion will burn under prolonged exposure to heat. When heated, this material may evolve toxic and flammable Hydrogen sulphide.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is sensitive to static discharge at temperatures at or above the flash point.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Dry chemical, CO₂ or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of carbon. Oxides of sulphur.

Protection of Firefighters: Runoff from fire control or dilution water may cause pollution. Hydrogen sulphide is heavier than air and may collect in low lying areas and confined spaces. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Stop leak if without risk. Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE**Handling:**

Do not swallow. Avoid breathing mist, vapours, or spray. See Section 8 for information on Personal Protective Equipment.

Storage:

Do not allow to freeze. Avoid heating above 80 °C (176 °F). Do not mix with anionic emulsions. Long term storage may require recirculation prior to use. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children. Asphalt contains trace amounts of Hydrogen sulfide which can accumulate in vapour space of tanks and containers.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure Guidelines****Component**

Asphalt [CAS No. 8052-42-4]

ACGIH: 0.5 mg/m³ (TWA); A4; BEI; Inhalable fraction; For Asphalt (Bitumen) fume, as benzene-soluble aerosol

OSHA: No PEL established.

Styrene-butadiene copolymer [CAS No. 9003-55-8]

ACGIH: No TLV established.

OSHA: No PEL established.

Hydrogen sulphide [CAS No. 7783-06-4]

ACGIH: 1 ppm (TWA); 5 ppm (STEL); (2009);

OSHA: 20 ppm (C); 50 ppm (Peak) (Maximum duration: 10 mins. once only if no other meas. exp. occurs.)

10 ppm (TWA); 15 ppm (STEL) [Vacated];

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

C: Ceiling

Engineering Controls:

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE)**Eye/Face Protection:**

Wear chemical safety goggles. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

| | |
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| Hand Protection: | Wear protective gloves. Neoprene or nitrile material suggested. Consult glove manufacturer specifications for further information. |
| Skin and Body Protection: | Wear protective clothing. |
| Respiratory Protection: | Not normally required. If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators. |
| General Hygiene Considerations: | Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection. |

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

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|----------------------------------------|---------------------------------------|
| Appearance: | Dark brown liquid. |
| Colour: | Dark brown. |
| Odour: | Mild acidic. |
| Odour Threshold: | Not available. |
| Physical State: | Liquid. |
| pH: | Not available. |
| Melting Point / Freezing Point: | ~ 0 °C (32 °F) |
| Initial Boiling Point: | Not available. |
| Boiling Range / Point: | ~ 100 °C (212 °F) |
| Flash Point: | > 104 °C (219.2 °F) (PMCC) |
| Evaporation Rate: | Not available. |
| Flammability (solid, gas): | Not applicable. |
| Lower Flammability Limit: | Not available. |
| Upper Flammability Limit: | Not available. |
| Vapor Pressure: | Not available. |
| Vapor Density: | Not available. |
| Relative Density: | 1.02 (Water = 1) at 15.6 °C (60.1 °F) |
| Solubilities: | Soluble in water. |



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| Partition Coefficient: n-Octanol/Water: | Not available. |
| Auto-ignition Temperature: | Not available. |
| Decomposition Temperature: | Not available. |
| Viscosity: | CRS-1, CRS-2, RS-1K, CRS-2P, LMCRS-2, CMS-2P: 80 to 400 SFs at 50 °C (122 °F) CQS-1HP, CQS-1H-P (Slurry), CQS-1H-P (Ruffill), LMCQS-1H, CSS-1, CSS-1H, CQS-1H: 20 to 100 SFs at 25 °C (77 °F) |
| Percent Volatile, wt. %: | Water: 30-45%; Organic: 0-1% at 260 °C (500 °F) |
| VOC content, wt. %: | Not available. |
| Density: | Not available. |
| Coefficient of Water/Oil Distribution: | Not available. |

Section 10: STABILITY AND REACTIVITY

| | |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Reactivity: | Contact with incompatible materials. Sources of ignition. Exposure to heat. |
| Chemical Stability: | Stable under normal storage conditions. |
| Possibility of Hazardous Reactions: | Not available. |
| Conditions to Avoid: | Contact with incompatible materials. Sources of ignition. Exposure to heat. Heating to dryness and further to 200 °C (392 °F). |
| Incompatible Materials: | Bases. Oxidizers. |
| Hazardous Decomposition Products: | Oxides of carbon. |

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

| Component | CAS No. | LD ₅₀ oral | LD ₅₀ dermal | LC ₅₀ |
|-----------------------------|-----------|-----------------------|-------------------------|-------------------|
| Asphalt | 8052-42-4 | Not available. | Not available. | Not available. |
| Styrene-butadiene copolymer | 9003-55-8 | Not available. | Not available. | Not available. |
| Hydrogen sulphide | 7783-06-4 | Not available. | Not available. | 444 ppm (rat); 4H |

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Central nervous system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. This product may contain trace amounts of Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within minutes of continuous exposure. Above 500 ppm Hydrogen sulphide may cause instantaneous loss of consciousness and immediate death.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. If swallowed in large quantities, Asphalt can obstruct the intestine.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Liver. Kidneys. Central nervous system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation. Hydrogen sulphide may reduce lung function; cause neurological effects such as headaches, nausea, depression and personality changes; eye and mucous membrane irritation; and damage to cardiovascular system.

Carcinogenicity: Product is not classified as a carcinogen. See Component Carcinogenicity table below for information on individual components. Long-term or repeated exposures to Asphalt fumes are possibly carcinogenic to humans. However, exposure to Asphalt fumes from this product is unlikely.

Component Carcinogenicity

| Component | ACGIH | IARC | NTP | OSHA | Prop 65 |
|-----------------------------|-------------|----------|-------------|------------------|-------------|
| Asphalt fumes | A4 | Group 2B | Not listed. | OSHA Carcinogen. | Listed. |
| Styrene-butadiene copolymer | Not listed. | Group 3 | Not listed. | Not listed. | Not listed. |

Mutagenicity: Not available.



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Reproductive Effects: Not available.
Developmental Effects
Teratogenicity: Not available.
Embryotoxicity: Not available.
Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.
Persistence / Degradability: Not available.
Bioaccumulation / Accumulation: Not available.
Mobility in Environment: Not available.
Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.



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Federal Regulations United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

| Component | Section 302 (EHS) TPQ (lbs.) | Section 304 EHS RQ (lbs.) | CERCLA RQ (lbs.) | Section 313 | RCRA CODE | CAA 112(r) TQ (lbs.) |
|-------------------|------------------------------|---------------------------|------------------|-------------|-----------|----------------------|
| Hydrogen sulphide | 500 | 100 | 100 | 313 | U135 | 10000 |

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

| Component | CAS No. | RTK List |
|-------------------|-----------|----------|
| Asphalt | 8052-42-4 | Listed. |
| Hydrogen sulphide | 7783-06-4 | E |

Note: E = Extraordinarily Hazardous Substance

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

| Component | CAS No. | RTK List |
|-------------------|-----------|----------|
| Asphalt | 8052-42-4 | Listed. |
| Hydrogen sulphide | 7783-06-4 | SHHS |

Note: SHHS = Special Health Hazard Substance

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

| Component | CAS No. | RTK List |
|-------------------|-----------|----------|
| Asphalt | 8052-42-4 | Listed. |
| Hydrogen sulphide | 7783-06-4 | E |

Note: E = Environmental Hazard

California

California Prop 65:



WARNING This product can expose you to Asphalt, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.



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Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: April 23, 2021

Version: 1.0

GHS SDS Prepared by: Deerfoot Consulting Inc.

Phone: (403) 720-3700